Rhodora

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NOTES FROM THE HERBARIUM OF THE UNIVERSITY OF WISCONSIN—XI[1]

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Extensions of Ranges of Aquatic Plants. In recent years the activities of collectors of aquatic plants in Wisconsin have resulted in several extensions of known ranges. The three men who have contributed most in this field have been Mr. John H. Steenis, working with the Wisconsin Land Economic Survey, Mr. L. R. Wilson, collecting in conjunction with his studies at the Trout Lake laboratories of the Geological and Natural History Survey, and Mr. Neil Hotchkiss of the U. S. Biological Survey. One of the most remarkable finds was that of *Potamogeton confervoides* in Langlade County, extending its known range westward from eastern New York and Pennsylvania.[2] This pondweed was collected by Wilson and Steenis in Greater Bass Lake, near Summit Lake P. O. The lake lies in drift of the Fourth Wisconsin glaciation. Identification of this species has been confirmed by Professor Fernald. Another eastern pondweed found near Summit Lake was *P. Oakesianus*, which was collected in Greater Bass Lake and in the nearby First Lake, and whose range is given is Gray's Manual as "Anticosti to n. N. Y. and N. J." This was also collected by Steenis in the northwest corner of Juneau County, in the bed of Glacial Lake Wisconsin. In the same lake bed is Wisconsin Rapids, where the plant was collected in 1894 by L. S. Cheney. Mr. Cheney also collected it at Stevens Point, just north of the limits of this now extinct lake. *Najas gracillima* has until recently been un-

[1] Published with aid to Rhodora from the National Academy of Sciences.

[2] See Fernald, Mem. Am. Acad. of Arts & Sci. xvii. pt. 1: 33 (1932).

known west of eastern New York;[1] it was collected by Hotchkiss and by Steenis in 1931 in Little Sissabagama Lake, near Stone Lake P. O., Sawyer County. The following summer it was collected by the writer in a small muddy pool west of Wisconsin Dells (formerly Kilbourn); this pool lies in an ancient abandoned channel of the Wisconsin River. Later in the same season it was again found by Mr. Hotchkiss and the writer, this time in the terminal moraine east of Wisconsin Dells, in Kittleson Pond, once close to the waters of Glacial Lake Wisconsin. *Littorella americana* enjoys a reputation for great rarity. It comes as something of a surprise, then, to find that it is a characteristic and abundant plant in many lakes of northern Wisconsin. Due to the efforts of the collectors named above, we now know it from the following Lakes. Sawyer County: Ham Lake, Round Lake, Ashegan Lake, all near Hayward. Douglas County: Round Lake near Gordon. Vilas County: Crystal Lake, Muskellunge Lake, Little John Jr. Lake, all near Trout Lake P. O., Langlade County: Town Line Lake, Summit Lake, Lower Clear Lake, Long Lake, Lower Bass Lake, all near Summit Lake P. O. Shawano County: Shawano Lake.[2] With one exception, only submerged and sterile plants were found. Those at Muskellunge Lake were exposed by lowering of the water-level, and were flowering. It may be that the apparent rarity of *Littorella* is due simply to the infrequency of its flowering, and to the fact that sterile individuals, in deep water, are easily overlooked. They are ordinarily to be found only by dredging, which was the method used by Steenis and by Wilson.

Upper Holly Lake. This little lake, 12 miles south of Hayward, Sawyer County, was found by Mr. Steenis to be one of the most interesting in the state. The water is very soft (pH 6.5), but while the flora of most soft-water lakes in the region consists of such small and rigid plants as *Elatine*, *Eriocaulon*, *Isoetes*, *Lobelia Dortmanna* and the like, with larger plants absent or rare, Upper Holly Lake has an abundant growth of *Elodea*, *Potamogeton*, *Nymphozanthus*, etc. It is the only very soft-water lake in the region in which muskellunge are found.[3] There are four species of *Utricularia: U. vulgaris*, common in medium- to hard-water lakes in the region but usually not in soft water; *U. gibba* and *U. minor*, both very rare in Wisconsin; and *U.*

[1] Fernald, Rhodora xxv. 109 (1923).

[2] Mr. Steenis tells of bathing in Shawano Lake and finding the leaves of *Littorella* stiff and sharp and abundant enough to cause discomfort.

[3] Data concerning Upper Holly Lake from Steenis, in Land Economic Inventory of northern Wisconsin: Sawyer County, p. 63 and table XIII (1932).

purpurea, unknown elsewhere in the state. *Potamogeton pulcher*, whose range Gray's Manual gives as "s. Me. to Fla.; and near St. Louis, Mo.," was collected in Upper Holly Lake. It is also represented in the Gray Herbarium, collected at Taylor's Falls, Minnesota, by F. P. Metcalf. *Eleocharis Robbinsii*, recorded in Gray's Manual as occurring "w. to Mich. and Ind.," is abundant on the shores of Upper Holly Lake, and has also been recently collected by Mr. Hotchkiss in Burnett, Polk, Barron and Oconto Counties.

ELATINE TRIANDRA IN WISCONSIN. This occurrence was recently reported by the writer,[1] and related to a now extinct glacial lake. Since this report it has again been collected by Mr. Neil Hotchkiss and the writer in Kittleson Pond, 5 miles east of Wisconsin Dells, which, like the pond in which the earlier collection was made, borders on glacial Lake Wisconsin. A collection from Round Lake, 5 miles east of St. Croix Falls, Wisconsin, September 5, 1927, *Fassett & Wilson*, no. 15290, proves also to be this species. This is of special interest because Round Lake bears much the same relation to glacial Barrens Lake[2] that the two neighboring lakes in southern Wisconsin bear to glacial Lake Wisconsin. The three lakes where the *Elatine* has been found are all kettleholes in terminal moraines, and are all so small that each is little more than a large mud-puddle.

The habitat of *E. triandra* seems to be quite different from that of the commoner *E. minima*. The latter species, in the Middle West at least, is always on sandy shores or in shallow water with sandy bottom. *E. triandra*, at its three known stations in Wisconsin, is on muddy shores or in shallow water underlain by soft mud. At its only known station in New England, at Coburn Park, Skowhegan, Maine, which was visited by the writer in 1931, it is also in shallow water and is rooting in a muddy bottom. Since the banks of the pool are overhanging and grassy, so that there is no opportunity for the *Elatine* to grow on the shore, the only form occurring there is the submerged f. *callitrichoides*. Incidentally, an inspection of this locality is sufficient to convince the writer of the correctness of the suggestion[3] that *E. triandra* is not native at that place.

SILENE CSEREII IN THE MIDDLE WEST. For some time the writer was puzzled by the presence in the herbarium of two quite different plants, each of which could with Gray's Manual be identified as

[1] Trans. Wis. Acad. xxv. 200 (1930).
[2] See McLaughlin, Ecological Monographs ii. 357 (1932).
[3] Fernald, RHODORA xix. 12 (1917).

Silene latifolia. Upon their being taken to the Gray Herbarium, the two species were at once recognized by Mr. Weatherby as *S. latifolia* and *S. Csereii*,[1] respectively. The latter is a native of the Balkan Peninsula and Asia Minor. A study of American material shows the following distinctions:

S. LATIFOLIA: calyx campanulate, at maturity only slightly narrowed at summit, rounded at base or in age depressed about the pedicel, the nerves mostly weak, much branched and freely anastomosing; upper bracts of the inflorescence scarious and glabrous throughout.

S. CSEREII: calyx ovoid, strongly narrowed at summit, tapering at base, the nerves very little if at all branched; upper bracts of the inflorescence firm and ciliate.

S. Csereii is represented in the Herbarium of the University of Wisconsin as follows: MINNESOTA: Pigeon River, Cook Co., August, 1927, *M. R. Shaw*, no. 470. WISCONSIN: Amnicon Lake, Douglas Co., July, 1927, *Shaw*, no. 483; Centuria, July 19, 1924, *J. J. Davis;* Fountain City, July 7, 1922, *H. H. Smith*, no. 7078; Camp Douglas, July 1, 1926, *Davis;* railroad tracks, Lyndon Station, June 30, 1917, *Davis;* Portage, August 10, 1926, *Davis*. INDIANA: on ballast, Gary, June 29, 1909, *L. M. Umbach*, no. 3685. Also recently reported from Linden, Indiana.[2] It is represented in the Gray Herbarium as follows: MONTANA: near Westby, July 7, 1927, *Esther L. Larsen*, no. 74. IOWA: dry gravelly ground, Estherville, September 22, 1925, *B. O. Wolden;* in dry gravelly ground along railroad right-of-way, Estherville, June 15, 1926, *Wolden*, no. 1219. OHIO: ballast, Erie R. R. dump, Phalanx, July 6, 1924, *Almon B. Rood;* pier track, Sandusky, August 14, 1920, *E. L. Moseley*.

MADISON, WISCONSIN.

EPIFAGUS VIRGINIANA IN MISSOURI.—The absence of Beech-drops in Missouri has long been a puzzle. Beech trees (mostly *Fagus grandifolia* var. *caroliniana*) occur in Missouri only in the southeastern portion of the state, chiefly on Crowley's Ridge, the only area of topographic relief in the lowlands. Over some portions of Crowley's Ridge in southeastern Missouri and on adjacent hills in the Ozark region bordering the southeastern lowland area, as in Perry and Cape Girardeau counties, there are some good stands of beech groves. It would be expected that, as in other areas east and north of Missouri, the beech-drops (*Epifagus virginiana*) could be found in any fair-sized grove of beech trees. However, there have been many attempts

[1] Baumg. Enum. Stirp. Transs. iii. 345 (1816); Williams, Journ. Linn. Soc. xxxii. 49 (1896); Ascherson & Graebner, Syn. Mitt.-Eur. Flora v. pt. 2: 62 (1929).

[2] Deam, Proc. Ind. Acad. Sci. xlii. 48 (1933).